

Town of Chapel Hill Municipal Wireless Forum

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Overview

- Municipal wireless models
- Technology
- Applications
- Crucial steps
- Potential obstacles
- State and federal trends

Municipal Wireless Statistics

	JULY 2005	FEB 2006	APR 2006
Region / Citywide	38	56	58
City Hotzones	22	29	32
Planned Deployments	34	59	69
Municipal / public safety	28	32	35
TOTAL	122	176	194

SOURCE: muniwireless.com

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Municipal Wireless Models

- What do we mean by “municipal wireless”?
 - In-house, direct retail by municipality
 - Wholesale model: muni-owned facilities + open access
 - Public-sector coordination, private-sector ownership and operation

Municipal Wireless Models

“In-house, direct retail”:

- WISP owned and operated by city
- Chaska, MN – “chaska.net”
 - city-owned electric utility
 - city owns the poles
 - \$15.99/mo broadband citywide
 - speeds comparable to DSL/cable modem

Municipal Wireless Models

“Wholesale model”:

- Facilities owned by city, operated by city or contractor
- Open to multiple ISPs
- Sometimes required under state law
- More common with municipal FTTH projects (UTOPIA, Tacoma Click!, etc.)
- Lack of retail revenue may complicate ROI

Municipal Wireless Models

“Public-sector coordination, private provider”:

- Private company investment, ownership and operation
- Service in exchange for:
 - facilities siting in public right-of-way
 - aggregated demand
 - first-mover advantages
 - may or may not be exclusive
 - Philadelphia, San Francisco, et al
- Be careful of the free lunch

Technology

“WiFi”

- 802.11 a/b/g; unlicensed 2.4GHz
- metro mesh = numerous antennas, range highly variable
- ubiquitous end-user equipment
- throughput: comparable to DSL/cable modem
- 802.11n on the horizon

Technology

“WiMAX”

- 802.16x; 10 – 66 GHz, licensed+unlicensed spectrum
- longer range: 35 mi. theoretical radius = fewer antennas
- throughput up to 135Mbps
- mobile (someday)
- prob. deployed in conjunction w/ WiFi
- transition plan is key

Technology

Others

- Other wireless:
 - EVDO, Flash-OFDM, HSDPA, 3G, etc. etc.
- Fiber optics
 - future-proof, unlimited throughput
 - fiber loop / PoP supports wireless backhaul
 - FTTH someday?

Applications

Reliance on ad hoc, decentralized wireless greatly limits potential applications and value of wireless networking.

Centralized organization / coordination enables valuable municipal applications.

Applications – Government Services

- Public safety
 - In-vehicle laptop access to databases, photos, vide, etc. (Granbury, TX; Las Vegas; Okla. City)
 - Security cameras/surveillance
 - disaster preparation and recovery, communications backup, homeland security (New Orleans)
- Intelligent traffic control
- Parking enforcement
 - WiFi-enabled parking meters (Houston)
- Utility automated meter reading (AMR) (Corpus Christi)

Applications – Government Services

- Permit / inspection officials
 - WiFi-enabled PDAs, on-site permit issuance
- Public transportation
 - Internet access on trains, buses, etc.
- Location-dependent applications, in conjunction with GPS
- Energy conservation: broadband-enabled appliances

Applications – Other Public Sector

- Higher education
 - University presence is a HUGE plus
 - off-campus access
 - brainpower, creativity, technical expertise, facilities, grant \$, etc.
- Public school districts
 - Assurance of access at home, for teachers, parents, students
- Hospitals/medical
 - remote monitoring
 - on-site transmission of data

Applications – Business & Residential

- Business:
 - Economic development
 - several recent studies prove link
 - attract / retain businesses, tech. personnel, etc.
 - Decrease telecom costs
 - Innovative applications
- Residential:
 - More competition = lower prices
 - Address digital divide

Crucial Steps

- Gather the stakeholders
 - municipal services, business community, residential groups, neighborhood assoc., utilities, incumbents, etc.
 - aggregate demand
- Clearly identify objectives
 - identify applications / needs
 - application brainstorming session
 - beware of the bandwagon...

Crucial Steps

- Legal Review
 - “Red flags”
 - municipal authority
 - pole attachments
 - regulatory issues / spectrum licensing
 - organizational structure options
 - interlocal cooperation
 - privacy
 - etc. etc.

Crucial Steps

- Technical feasibility study
 - potential technology options, given topography, coverage needs, etc.
 - interference issues
 - security
- Business model feasibility study
 - cost estimate
 - take rates / demand
 - ROI, etc

Crucial Steps

Have a reasonably good idea of what you are looking for, before the RFP process, but allow flexibility for different approaches that may emerge during the RFP process.

Potential Obstacles

- Legislated barriers to entry
- Incumbent obstructionism
- Pole attachment / facilities siting agreements
- Bureacracy / lack of focus

Municipal Wireless/Broadband Resources

- MuniWireless.com
- Baller Herbst daily email list

State Trends – Barriers to Public Entry

- State barriers by end of 2004
 - AR, FL, MN, MO, NE, NV, PA, SC, TN, TX, UT, VA, WA, WI
 - “No more Pennsylvanias”
- State battles in 2005
 - CO, FL, IA, IL, IN, LA, MI, OH, OR, NE, TN, TX, VA, WV
- State battles in 2006
 - IN, TN
- Roll-back bills:
 - LA, PA, others

Congress - Barriers to Public Entry

– House

- Sessions
- Barton-Rush-Upton-Pickering (COPE Act)

– Senate

- Lautenberg-McCain
- Ensign
- Stevens?

Other Issues in Communications Policy

- Network Neutrality
- Franchising Reform (state & federal)
- IPTV – “cable service” or not?
 - AT&T lawsuits vs. Chicago suburbs

Questions?

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